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ABSTRACT

Stress in various occupations is of interest to managers, counselors, and personnel workers. A study was undertaken to examine, through the use of self-report scales, stress-related characteristics of workers in occupations which require many and varied human interactions. Subjects were 244 full-time employees in six professions: health services, banking, social services, industry, education, and postal services. Subjects completed a battery of stress-related scales assessing burnout, state and trait anxiety, locus of control, and job satisfaction. The results indicated significant differences in the levels of stress and rates of burnout among workers. Respondents working in social services, education, and health services had significantly greater stress levels than did individuals working in banking, industry, and postal services. Although these findings do not indicate whether stress-related occupations produce stress or attract employees who tend to experience stress, responses to work-related questions may indicate that employees perceive their work as producing stress. (NB)

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Stress and the Workplace: A Comparison of Occupational Fields

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Stress and the Workplace: A Comparison of Occupational Fields

Stress in various occupations is of interest to managers, counselors, and personnel workers because of the role each group plays in helping individuals achieve maximum production which provides financial rewards, mental stimulation, recognition, and physical and emotional health. This study examined, through the use of self-report scales, stress-related characteristics of workers in occupations which require many and varied human interactions.

As defined in this research, stress is the internal strain caused by the body's response to outside stressors, which may be physiological, social, or psychological. As the body tries to adjust to stressors, the reaction may alter various bodily chemicals, hormones, organic functions, and anxiety levels (McLean, 1979). The physical and emotional changes within the body often cause overt behavioral manifestations (apathy, poor interpersonal relationships, decreased mental functioning, and sickness) which are easily observed by co-workers. When stressors are perceived to be unmanageable by employees, the long-term effects may be chronic physical diseases, anxiety and depression, and/or memory loss.

Researchers agree, generally, that people-oriented occupations are more stressful than occupations which require persons to work alone or in small groups with data

and objects, mainly because data and objects are predictable and people are unpredictable (Farber, 1983; Gherman, 1981; Maslach, 1982; Pines & Kafry, 1978). Part of the reason why having responsibility for people acts as a stressor probably results from the specific nature of the responsibility, particularly as it relates to having to make unpleasant interpersonal decisions. Another reason that occupations which require interaction among humans can be stressful is that these jobs lend themselves to work overload and, perhaps, role conflict and ambiguity, as well. Matteson and Ivancevich (1982) reported a study which showed that individuals having responsibility for other people suffered from more heart disease than individuals who had responsibility for objects.

Stressors affect workers differently because of a number of genetic and environmental factors, such as personality type; metabolism rate; physical condition of the body as a result of exercise, rest, and disease; and the use of self-regulation techniques; however, stress has been associated with a number of practices which occur within the organization. Among these practices are the lack of employee input into the decision-making process, disproportionate work loads, inability of individuals to reach career goals (promotion and recognition), poor communication between administrators and employees, inadequate staff development for maintenance skills and personal development, nonfunctioning support systems,

deemphasis on exercise and relaxation programs, and inadequate matching of personal characteristics to job demands (Beehr & Newman, 1978; Cherniss, 1980; Cooper & Marshall, 1977; Davis-Sacks, 1985/86; Dorin, 1985/86; Erera, 1983/84; Hanson, 1986; Ray, 1983; Savicki & Cooley, 1987). Because people-oriented occupations are in a variety of work settings and involve numerous types of interactions, it seems plausible that different work environments impose more or less of the practices associated with stress. This study gives some enlightenment on the possibility that stress is not just associated with differences in individuals and their coping strategies, but that there are general differences in stress levels among occupational settings.

Hypotheses

1. Persons employed in different people-oriented occupational fields will have significantly different scores on a variety of scales related to stress.

2. Persons employed in health services, education, and social services will show significantly greater stress, as measured by a battery of stress-related scales, than persons employed in banking, industry, and postal services.

Methods

Sample

The sample consisted of 244 full-time employees in six professions: health services, banking, social services, industry, education, and postal services. Distribution of

the sample according to sex was 98 males and 146 females; whereas distribution according to race was 198 whites, 43 blacks, and 3 of other races. There were 45 respondents under 30 years old, 100 respondents between 30 and 40 years old, and 99 respondents 40 years or older. In each workplace, only employees whose jobs involved extended association with other people participated in the study. All of the respondents worked in the midlands of South Carolina and took part in the study voluntarily, although anonymity provided for nearly 100 percent participation of those employees who were selected for the sample in each workplace.

Instrumentation

The Matthews Burnout Scale for Employees (Matthews, 1986) is a self-report instrument which is designed for working adults who are engaged in people-related occupations. The scale is suitable for individual or group use, as well as research. Scores ranging from 0 to 100 indicate increasing evidence of burnout or symptoms which reflect a tendency toward burnout. The scale has a reported reliability of .91.

The Maslach Burnout Inventory (Maslach & Jackson, 1981), designed for use specifically in human services and educational institutions, assesses three conditions believed to be aspects of the burnout syndrome: emotional exhaustion, depersonalization, and lack of personal accomplishment. Each of the three subtests results in two scales, one

measuring frequency and the other measuring intensity. These six scales have reported reliabilities ranging from .71 to .90.

The State-Trait Anxiety Inventory measures state anxiety, an emotional state that exists at a given moment in time and at a particular level of intensity, and trait anxiety, relatively stable individual differences in anxiety-proneness (Spielberger, 1983). The reported internal consistencies of the state and trait scales are .90 and .93, respectively. Both scales generally measure to what degree an individual views situations as anxiety-producing, whether temporary (state) or general (trait).

The Adult Nowicki-Strickland Internal-External Control Scale (Nowicki & Duke, 1974) measures locus of control, the tendency to feel personally in control of situations and events (internal) or to feel that others are in control and that the individual is relatively helpless (external). The scale has reported split-half reliabilities in the 60's and test-retest reliability of .83. "External" individuals are more likely to experience burnout because they feel out of control and unable to change worsening situations.

The Job Satisfaction Scale measures an individual's degree of satisfaction with the current employment situation. High scores are indicative of high job satisfaction. This instrument, published first in England in 1975 by BPC

Publishing, Ltd., appears in the United States in the book The Mind Test (Aero & Weiner, 1981).

Procedure

In each workplace, the supervisor administered the battery of stress-related scales to the sample. The researcher visited each workplace and distributed instruments in unmarked packets for completion with no names or other identification. The process of test administration was blind in that supervisors never saw the completed instruments. In some instances, the researcher utilized entire worksites, although no employee had to participate against his/her will. At other sites, only persons in occupations which required direct association with people answered the scales. Because of the method used to administer the tests, the sample was somewhat voluntary; however, the anonymous nature of the responses ensured an almost total return rate.

Results

Table 1 shows the means and standard deviations of the eleven scales for each of the six occupational areas. For each scale, except the two accomplishment scales in the Maslach Burnout Inventory and the Job Satisfaction Scale where low scores indicate stress or burnout, high scores indicate greater stress or the tendency toward burnout than do low scores.

To test the hypothesis of significant differences among the occupations, a series of one-way analyses of variance

Table 1

Means and Standard Deviations of Stress-Related Scales

Scale	Health Services (N = 44)		Banking (N = 30)		Social Services (N = 26)	
	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Matthews Burnout	23.8	14.7	19.4	10.8	33.0	11.6
Emotion--Frequency	21.4	12.1	18.1	10.6	24.9	11.3
Emotion--Intensity	25.9	13.2	23.7	11.4	30.3	13.0
Depersonalization--Frequency	6.2	5.4	5.1	5.2	6.6	5.1
Depersonalization--Intensity	8.7	8.1	8.5	7.9	9.7	5.8
Accomplishment--Frequency	37.5	8.9	38.1	7.3	34.4	7.8
Accomplishment--Intensity	38.3	8.9	37.4	8.5	36.0	8.7
Locus of Control	8.4	3.5	7.7	4.5	10.7	4.3
Job Satisfaction	126.4	17.8	124.4	18.4	122.4	18.7
State Anxiety	33.0	9.5	32.8	8.5	35.8	7.8
Trait Anxiety	34.4	8.4	34.6	7.3	38.7	6.4

Table 1 (Continued)

Means and Standard Deviations of Stress-Related Scales

Scale	Industry (N = 66)		Education (N = 55)		Postal Services (N = 23)	
	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Matthews Burnout	20.6	12.5	26.7	14.4	22.5	10.1
Emotion--Frequency	14.1	8.1	21.7	13.4	13.2	10.2
Emotion--Intensity	22.7	12.5	26.1	15.2	15.5	9.8
Depersonalization--Frequency	5.6	4.8	8.7	7.5	5.5	3.9
Depersonalization--Intensity	9.3	8.3	11.1	8.3	5.9	4.2
Accomplishment--Frequency	33.3	8.7	35.8	7.4	30.2	9.9
Accomplishment--Intensity	36.5	9.7	39.0	8.3	33.3	8.9
Locus of Control	7.0	3.7	8.6	4.0	8.6	3.8
Job Satisfaction	127.8	17.6	126.2	20.9	127.9	13.7
State Anxiety	31.1	7.5	34.6	10.2	31.6	9.9
Trait Anxiety	31.8	7.0	38.2	10.1	35.0	7.7

were conducted. The results which are reported in Table 2 show significant differences for four of the scales tested. The scores on the Matthews Burnout Scale for Employees, the emotion frequency subtest of the Maslach Burnout Inventory, the Locus of Control Scale, and the trait anxiety scale of the State-Trait Anxiety Inventory show significant differences when using a family-wise error rate of .0045 (.05 level of confidence divided across the eleven tests).

Rather than conducting all possible post-hoc pairwise comparisons between occupations on each scale, the researcher conducted two further analyses. First, the investigator ranked the occupations according to the means for each scale, with high ranks indicating the end of the scale designated as stressful (high rank is associated with a high mean for all scales, except the Job Satisfaction Scale and the two accomplishment subscales of the Maslach Burnout Inventory in which high ranks indicate low means). The ranks of occupations were totaled first for all eleven scales and then separately for the four original scales which were significant. Second, health services, social services, and education were collapsed and tested against banking, industry, and postal services in a series of eleven *t* tests to test the second hypothesis.

Table 3 shows the results of the rankings and summed ranks for each occupational field. Overall, social service employees scored "highest" (indicating stress and burnout), and education was second. Health services came third,

Table 2

Results of Analyses of Variance on Stress-Related Scales

Scale	*F* Value	Probability
Matthews Burnout Scale	4.79	.0003*
Emotion Frequency	6.05	.0001*
Emotion Intensity	3.11	.0099
Depersonalization Frequency	2.31	.0451
Depersonalization Intensity	1.31	.2625
Accomplishment Frequency	3.24	.0076
Accomplishment Intensity	1.37	.2375
Locus of Control	3.64	.0035*
Job Satisfaction	0.41	.8393
State Anxiety	1.45	.2079
Trait Anxiety	4.61	.0005*

*Significant at the family-wise error rate of .0045.

Table 3

Results of Rankings and Summed Ranks

Scale	Health Services	Banking	Social Services	Industry	Education	Postal Services
Matthews Burnout	4	1	6	2	5	3
Emotion-- Frequency	4	3	6	2	5	1
Emotion-- Intensity	4	3	6	2	5	1
Depersonalization-- Frequency	4	1	5	3	6	2
Depersonalization-- Intensity	3	2	5	4	6	1
Accomplishment-- Frequency	2	1	4	5	3	6
Accomplishment-- Intensity	2	3	5	4	1	6
Locus of Control	3	2	6	1	5	4
Job Satisfaction	3	5	6	2	4	1
State Anxiety	4	3	6	1	5	2
Trait Anxiety	2	3	6	1	5	4
Sum*	35	27	61	27	50	31
Sum**	13	9	24	6	20	12

*Sum of all ranks.

**Sum of the ranks of the four significantly different scales.

followed by postal services, banking, and indurtry, respectively. Consistent with the second hypothesis, the summed ranks provide some evidence that occupations within the fields of education, health services, and social services are more stressful than the occupations in the other areas which were studied.

Table 4 reports the results of the eleven *t* tests which were conducted to determine whether the scores of employees in health services, social services, and education, taken together, indicated greater stress than the scores of employees in the other occupational fields of banking, industry, and postal services. Five of the scales (Matthews Burnout Scale for Employees, emotion--frequency and emotion--intensity of the Maslach Burnout Inventory, Locus of Control Scale, and trait anxiety on the State-Trait Anxiety Inventory) show significant differences. This result is in keeping with the overall analyses of variance reported in Table 2, with the addition of the emotion--intensity scale. Employees in health services, social services, and education were associated with higher scores on stress-related scales than employees in other areas of people-oriented occupations which were tested.

Discussion

Workers in many people-oriented occupations feel that, compared to other occupations, their jobs are usually stress-producing. In general, it is known that stress occurs most frequently in employees who work with people.

Table 4

Results of t Tests on Stress-Related Scales

Scale	*t* Value	Probability
Matthews Burnout Scale	3.79	.0002*
Emotion Frequency	5.04	.0001*
Emotion Intensity	2.92	.0039*
Depersonalization Frequency	2.54	.0116
Depersonalization Intensity	1.35	.1780
Accomplishment Frequency	1.92	.0562
Accomplishment Intensity	1.61	.1080
Locus of Control	2.91	.0039*
Job Satisfaction	-0.64	.5249
State Anxiety	2.25	.0251
Trait Anxiety	3.50	.0006*

*Significant at the family-wise error rate of .0045.

Many employees, especially those working with children, the needy, and the physically ill, feel that their surroundings are more stressful than the environments of other occupations.

This study examined employees in six occupational fields, all of which involved direct association with people. The results of the application of a wide variety of stress-related scales indicate that there are significant differences in the levels of stress and rates of burnout among employees in the professions. Of the employees tested in this study, persons working in social services, education, and health services had significantly greater stress levels than individuals working in banking, industry, and postal services.

The results of this study do not indicate whether stress-related occupations produce stress or attract employees who tend to experience stress. However, many of the questions on the selected scales are work-related, and responses to these questions may indicate that the employees perceive their work as producing stress.

The findings in this study disagree somewhat with the findings of Hallberg and Hallberg (1986) in the development of The Stress Schedule, a self-report scale. With 22 occupations in the norm group, there was little difference in range, means, standard deviations, and general shape of the curve. Although the sample included persons from a larger spectrum of occupations than this study did, many of

the persons in the sample worked in people-oriented jobs, such as teachers, counselors, managers, and dentists. One reason for the finding may be that the instrument was designed to measure trait stress rather than situational stress. The authors of The Stress Schedule concluded that there were no major differences between occupational stress levels, only differences between individuals within occupational groups.

The findings of this research and the study by Hallberg and Hallberg (1986) should be considered as tentative. Much more research is necessary to investigate the interaction between trait and situational stress in people-oriented occupations. Knowledge of the stress levels in various employment areas is useful for career counseling and guidance.

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